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3. It has an educative and intellectual value of its own. This can be better understood after a practical acquaintance with the pursuit.

4. It is not costly.

5. It leads to the formation of desirable acquaintances for a most cordial *esprit de corps* exists among its devotees.

6. It requires method in observing and recording results, and leads to habits of exactness; likewise to the setting of problems to be worked out and to a desire for higher knowledge. Its influence is wholly wholesome upon mind and brain and temper. It is an uplifting pursuit.

7. It is constructive, not destructive, and adds to the sum of human knowledge.

In view of this presentation, will not a few of you join the ranks of the observers? I should be glad to assist any novice in making a right start, remembering the difficulties which confronted me at the outside for want of accessible advice.

ELDRIDGE, CAL.

PLANETARY PHENOMENA FOR JULY AND AUGUST, 1913.

By MALCOLM MCNEILL.

PHASES OF THE MOON, PACIFIC TIME.

New Moon	July 3,	$9^h\ 6^m$ P.M.	New Moon ...	Aug. 2,	$4^h\ 58^m$ A.M.
First Quarter...	" 10,	1 37 P.M.	First Quarter...	" 8,	8 3 P.M.
Full Moon	" 17,	10 6 P.M.	Full Moon	" 16,	12 27 P.M.
Last Quarter...	" 26,	1 59 A.M.	Last Quarter...	" 24,	4 18 P.M.
			New Moon ...	" 31,	12 38 P.M.

The third eclipse of the year, a partial eclipse of the Sun, occurs on August 31st. The region of visibility is from Greenland to Nova Scotia. The eclipse is a small affair devoid of scientific interest, the maximum obscuration of the Sun being only 15 per cent of its diameter.

The Earth is in aphelion on the afternoon of July 3d.

Mercury is an evening star at the beginning of July, setting rather more than an hour and a half after sunset, and the interval does not diminish to an hour until after the middle of the month, so it may be easily seen during the evening twilight. It comes to greatest east elongation on the morning of July 7th, the apparent distance from the Sun being then 26° 13′, a considerably greater distance than at the average greatest elongation, this because the planet reaches aphelion on July 16th, only nine days after greatest elongation. After the time of greatest east longation the planet approaches the Sun and passes inferior conjunction on the morning of August 4th, becoming a morning star. The distance from the Sun increases rapidly and the planet reaches greatest west elongation, 18° 26′, on the morning of August 22d, rather a small greatest elongation, because it passes perihelion on August 29th, only a week later. During the latter half of August *Mercury* will rise rather more than an hour before sunrise, and may be seen on clear mornings in the eastern twilight.

Venus is a morning star, rising a little less than three hours before sunrise on July 1st. This interval increases about half an hour during the month and then diminishes slightly during August, being a little over three hours on August 31st. It reaches greatest west elongation, 45° 44′, on the afternoon of July 3d, and from that time the apparent distance between planet and Sun diminishes, but on account of the increasing northerly distance of the planet relative to the Sun the interval between the rising of the planet and sunrise increases for some weeks. During the two months *Venus* moves about 70° eastward and 4° northward among the stars from a position a little south of the *Pleiades* in *Taurus* through that constellation and *Gemini* into *Cancer*. In its easterly motion it passes *Saturn* at a distance of 1° 18′ to the south on July 21st, and also comes to conjunction with *Neptune* on the afternoon of August 29th, the latter planet being only 18′ north of *Venus* at the time of nearest approach.

Mars rises a little after 1 A. M. on July 1st and shortly after 11 P. M. on August 31st, moving during the interval from a point in *Aries*, 43° eastward and 9° northward through that constellation to a position in the eastern part of *Taurus*. Toward the end of July it passes about 5° south of the *Pleiades*, and on August 12th about 5° north of α *Tauri*, *Aldebaran*, the principal star of the constellation. On August 24th *Mars* is in conjunction with *Saturn,* the former passing about one degree south of the latter. Its actual distance from the Earth diminishes about thirty millions of miles during July and August, and its brightness increases about 40 per cent during this time, being at the end of August about 28 per cent of its brightness at the next opposition in January, 1914.

Jupiter comes to opposition with the Sun on the morning of July 5th, and during this month is above the horizon practically the entire night. By the end of August it sets before 1 A. M. It is in the constellation *Sagittarius,* and during the two months moves about 6° westward a short distance north of the Milk Dipper group.

Saturn is drawing farther away from the Sun, rising a little before 3 A. M. on July 1st, and shortly after 11 P. M. on August 21st. It is in the constellation *Taurus,* a little north and east of *Aldebaran,* and during the month moves about 6° eastward. Its conjunction with *Venus* on July 21st and with *Mars* on August 24th have already been mentioned.

Uranus is in opposition with the Sun on July 28th and is consequently on the meridian at midnight. On July 1st it passes the meridian at about 2 A. M. and on July 31st at a little before 10 P. M. It moves about 2° westward and a little southward in the constellation *Capricorn.* No bright stars are near, but early in July the planet passes about one degree south of the fifth-magnitude star *υ Capricorni.*

Neptune is in conjunction with the Sun on July 18th and during July and August is too near the Sun even for telescopic view.